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U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NUMBER

13833.0013

U.S. APPLICATION NO. (If known, see 37 CFR 1.5)

10/089195

TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. 371INTERNATIONAL APPLICATION NO.
PCT/FR99/02291INTERNATIONAL FILING DATE
27 September 1999PRIORITY DATE CLAIMED
N/ATITLE OF INVENTION COSMETIC COMPOSITION BASED ON ORGANIC SILICON COMPOUNDS
COMPRISING AT LEAST ONE FUNCTION WITH A COSMETIC EFFECT

APPLICANT(S) FOR DO/EO/US

SAMAIN, Henri; ROLLAT, Isabelle; JEANNE ROSE, Valerie; SANCHEZ, Clement

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.
4. ☒ The US has been elected by the expiration of 19 months from the priority date (Article 31).
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☒ is attached hereto (required only if not communicated by the International Bureau).
 - b. ☐ has been communicated by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).
 - a. ☒ is attached hereto.
 - b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
 - a. ☐ are attached hereto (required only if not communicated by the International Bureau).
 - b. ☐ have been communicated by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☒ have not been made and will not be made.
8. ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371 (c)(3)).
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11 to 20 below concern document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A **FIRST** preliminary amendment.
14. ☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
15. ☐ A substitute specification.
16. ☐ A change of power of attorney and/or address letter.
17. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825.
18. ☐ A second copy of the published international application under 35 U.S.C. 154(d)(4).
19. ☐ A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).
20. ☒ Other items or information:
PCT Request - Form PCT/RO/101
IPER - Form PCT/IPEA/409
Forms PCT/IB/301, 308 and 332

U.S. APPLICATION NO. (if known see 37 CFR 1.5) 10/089195		INTERNATIONAL APPLICATION NO. PCT/FR99/02291		ATTORNEY'S DOCKET NUMBER 13833.0013	
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21. <input checked="" type="checkbox"/> The following fees are submitted: BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)): Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO. \$1040.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO \$890.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$740.00 International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) \$710.00 * International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) \$100.00 ENTER APPROPRIATE BASIC FEE AMOUNT =				CALCULATIONS PTO USE ONLY <table style="width:100%; border: none;"> <tr> <td style="width:60%; border: none;">\$ 890</td> <td style="width:40%; border: none;"></td> </tr> <tr> <td style="border: none;">\$ 130</td> <td style="border: none;"></td> </tr> </table>		\$ 890		\$ 130	
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Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input checked="" type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				<table style="width:100%; border: none;"> <tr> <td style="width:60%; border: none;">\$</td> <td style="width:40%; border: none;"></td> </tr> <tr> <td style="border: none;">\$</td> <td style="border: none;"></td> </tr> </table>		\$		\$	
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CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	\$	
Total claims	12 - 20 =	0	x \$18.00	\$	
Independent claims	1 - 3 =	0	x \$84.00	\$	
			+ \$280.00	\$	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)				\$	
TOTAL OF ABOVE CALCULATIONS =				\$ 1020	
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.				+	
SUBTOTAL =				\$ 1020	
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				\$	
TOTAL NATIONAL FEE =				\$ 1020	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property +				\$	
TOTAL FEES ENCLOSED =				\$ 1020	
				Amount to be refunded:	\$
				charged:	\$

a. ☒ A check in the amount of \$ 1020 to cover the above fees is enclosed.

b. ☐ Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees.
 A duplicate copy of this sheet is enclosed.

c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any
 overpayment to Deposit Account No. 19-4293. A duplicate copy of this sheet is enclosed.

d. ☐ Fees are to be charged to a credit card. **WARNING:** Information on this form may become public. **Credit card
 information should not be included on this form.** Provide credit card information and authorization on PTO-2038.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR
 1.137 (a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

STEPTOE & JOHNSON LLP
 1330 Connecticut Ave., N.W.
 Washington, D.C. 20036
 Tel: (202) 429-3000

SIGNATURE

D. Douglas Price

NAME

24,514

REGISTRATION NUMBER

ATTY. DKT. 13833.0013

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Henri SAMAIN et al

Serial No.

Filed: Herewith

For: COSMETIC COMPOSITION BASED ON ORGANOSILICON
COMPOUNDS COMPRISING AT LEAST ONE FUNCTION
WITH A COSMETIC EFFECT

PRELIMINARY AMENDMENT

Asst. Commissioner of Patents
Washington, D.C. 20231

Sir:

Prior to initial examination, please amend the above-
identified application as follows:

IN THE ABSTRACT:

Add the Abstract of the Disclosure appended hereto.

IN THE SPECIFICATION:

Page 1, replace the first full paragraph at lines 4-10 as
follows:

-- The present invention relates generally to aqueous cosmetic compositions, in particular for treating the hair, comprising unpolymerized or relatively unpolymerized, water-soluble organosilicon compounds containing two nonhydrolyzable functions, at least one of which has a cosmetic effect and at least one other of which has a solubilizing effect, and two hydrolyzable or hydroxy functions per molecule.--

Page 1, replace the fourth paragraph at lines 27-34 as follows:

--Other systems have been developed, especially using dyes bearing chemical functions having great chemical affinity for the functions of the hair. A large gain in retention is achieved. However, it remains insufficient for many users. Furthermore, since the chemical functions of the hair are highly dependent on the hair's care history, this type of system shows very variable coloring effects depending on the hair onto which these systems are applied.--

Page 1, replace the last paragraph beginning at line 35 through page 2, line 2, as follows:

--In the case of hair conditioning treatments, intended to give suppleness to hair that is considered too stiff or to soften hair that is too dry, the current treatments give very poor retention results.--

Page 2, replace the second full paragraph at lines 7-20 as follows:

--The inventors have noted, surprisingly, that it is possible to formulate effective, rinse-fast cosmetic compositions by incorporating into these compositions unpolymerized or relatively unpolymerized organosilicon compounds chosen from organosilanes comprising one silicon atom and organosiloxanes comprising two or three silicon atoms, the organosilicon compounds also comprising per molecule at least two hydroxyl groups or two hydrolyzable functional groups and at

least two nonhydrolyzable functional groups, at least one of these nonhydrolyzable functional groups being a functional group having a cosmetic effect, and at least one other of these nonhydrolyzable functional groups being a solubilizing functional group.--

Page 2, replace the fourth full paragraph at lines 28-33 as follows:

--The compositions according to the invention generally make it possible to obtain shampoo-fast conditioning effects on the hair. In addition, the presence of the nonhydrolyzable functional group, having a cosmetic effect, makes it possible to obtain other cosmetically advantageous retention effects.--

Page 2, replace the last paragraph beginning at line 34 through page 3, line 5, as follows:

--In the present invention, the expression "nonhydrolyzable functional group having a cosmetic effect" means any functional chemical group that, after applying the composition to the hair, gives the hair a specific retentive cosmetic effect. Among the specific cosmetic effects that may be mentioned are coloring effects, UV-stabilizing, antibacterial or antifungal effects, and reducing effects.--

Page 3, replace the first full paragraph at lines 6-14 as follows:

--Thus, for example, when the nonhydrolyzable functional group(s) with a cosmetic effect is (are) group(s) with a coloring effect, the compositions that may be obtained give highly retentive coloring effects, without using active agents that degrade the fiber (aqueous hydrogen peroxide solution or aqueous ammonia) and moreover without being confronted with problems of irregular results when the composition has been applied to hair that is not uniformly sensitized.--

12. (New) A cosmetic composition comprising, in a cosmetically acceptable medium, at least 0.02% by weight, relative to the total weight of the composition, of at least one substantially unpolymerized, water-soluble, organosilicon compound, the organosilicon compound being a silane having one silicon atom or a siloxane having two or three silicon atoms, the organosilicon compound having at least two hydroxyl or hydrolyzable groups and at least two nonhydrolyzable functional groups per molecule, at least one of the nonhydrolyzable functional groups being a group with a cosmetic effect, and at least one of the other nonhydrolyzable functional groups being a group with a solubilizing function.

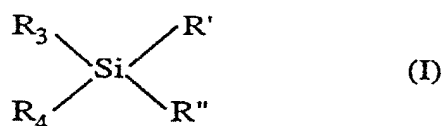
13. (New) The cosmetic composition of claim 12, wherein the organosilicon compound represents at least 0.5% by weight of the composition.

14. (New) The composition of claim 13, wherein the at least one nonhydrolyzable functional group with a cosmetic effect has a coloring, UV-stabilizing, antibacterial or antifungal effect or a reducing effect.

15. (New) The composition of claim 12, wherein the at least one nonhydrolyzable functional group with a solubilizing function is a primary, secondary or tertiary amine group.

16. (New) The composition of claim 12, wherein the hydrolyzable groups are alkoxy, aryloxy or halogen groups.

17. (New) The cosmetic composition of claim 12, wherein the organosilicon compound has the formulae:



in which:

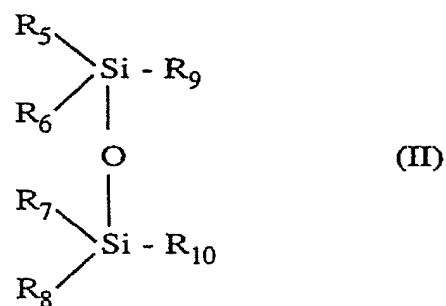
R' represents a halogen or an OR₁ group and R'' represents a halogen or an OR₂ group;

R₁ and R₂ represent, independently of each other, hydrogen or a substituted or unsubstituted, saturated or unsaturated, linear or branched hydrocarbon-based group;

R₃ is a nonhydrolyzable functional group with a cosmetic effect; and

R₄ is a nonhydrolyzable functional group with a solubilizing function.

18. (New) The cosmetic composition of claim 12, wherein the organosilicon has the formula



in which:

R₅ represents a nonhydrolyzable functional group with cosmetic activity;

R₆ represents a halogen or an OR'₆, R''₆, R'''₆ or R''''₆ group;

R₇ represents a halogen or an OR'₇, R''₇, R'''₇ or R''''₇ group;

R₈ represents a halogen or an OR'₈, R''₈, R'''₈ or R''''₈ group;

R_9 represents a halogen or an OR'_9 , R''_9 , R'''_9 or R''''_9 group;
and

R_{10} represents a halogen or an OR'_{10} , R''_{10} , R'''_{10} or R''''_{10} group;

R'_6 , R''_6 , R'_7 , R''_7 , R'_8 , R''_8 , R'_9 , R''_9 , R'_{10} and R''_{10} represent, independently of each other, a substituted or unsubstituted, saturated or unsaturated, linear or branched hydrocarbon-based group;

R'_6 , R'_7 , R'_8 , R'_9 and R'_{10} may represent, independently of each other, hydrogen;

R'''_6 , R'''_7 , R'''_8 , R'''_9 and R'''_{10} are nonhydrolyzable functional groups with a cosmetic effect;

R''''_6 , R''''_7 , R''''_8 , R''''_9 and R''''_{10} are nonhydrolyzable functional groups with a solubilizing function;

at least one of the groups R_6 and R_9 denotes a halogen or an OR'_6 or OR'_9 group;

at least one of the groups R_7 , R_8 and R_{10} denotes a halogen or an OR'_7 , OR'_8 or OR'_{10} group; and

at least one of the groups R_6 , R_7 , R_8 , R_9 and R_{10} denotes an R''''_6 , R''''_7 , R''''_8 , R''''_9 and R''''_{10} functional group.

19. (New) The composition as claimed claim 14, wherein the group with a coloring effect is a nitroaromatic group, anthraquinone group, naphthoquinone group, benzoquinone group, azo group, xanthene group, triarylmethane group, azine group, indoaniline group, indophenol group or indoamine group.

20. (New) The composition of claim 14, wherein the group with an antibacterial effect is a bisguanidine group, cationic group, macrolide group or phenolic group.

21. (New) The composition of claim 14, wherein the group with an antifungal effect is a pyridine group, undecylenic group, salicyl group or imidazole group.

22. (New) The composition of claim 12, wherein the composition is in the form of a hair product.

23. (New) The composition of claim 22, wherein the composition is in the form of a hair product for holding the hair or for shaping the hair.--

R E M A R K S

The specification has been amended to make minor editorial changes, original claims 1-11 have been cancelled in lieu of new claims 12-23 presented herewith, and an Abstract of the Disclosure has been added.

Attached hereto is a marked-up version of the changes made to the specification by the present Amendment. The attachment is captioned "Version with markings to show changes made."

In view of the foregoing, early action on the merits is respectfully requested.

Respectfully submitted,



D. Douglas Price
Reg. No. 24,514

STEPTOE & JOHNSON LLP
1330 Connecticut Ave., N.W.
Washington, D.C. 20036
Tel: (202) 429-6748

VERSION WITH MARKING TO SHOW CHANGES MADEIN THE ABSTRACT:

An Abstract of the Disclosure has been added.

IN THE SPECIFICATION:

Page 1, the first full paragraph at lines 4-10 has been amended as follows:

--The present invention relates generally to aqueous cosmetic compositions, in particular for treating the hair, comprising unpolymerized or relatively unpolymerized, water-soluble organosilicon compounds containing two nonhydrolyzable functions, at least one of which has a cosmetic effect and at least one other of which has a solubilizing effect, and two hydrolyzable or hydroxy functions per molecule.--

Page 1, the fourth paragraph at lines 27-34 has been amended follows:

--Other systems have been developed, especially using dyes bearing chemical functions having great chemical affinity for the functions of the hair. A large gain in [remanence] retention is achieved. However, it remains insufficient for many users. Furthermore, since the chemical functions of the hair are highly dependent on the hair's care history, this type of system shows very variable coloring effects depending on the hair onto which these systems are applied.--

Page 1, the last paragraph beginning at line 35 through page 2, line 2, has been amended as follows:

--In the case of hair conditioning treatments, intended to give suppleness to hair that is considered too stiff or to soften hair that is too dry, the current treatments give very poor [remanence] retention results.--

Page 2, the second full paragraph at lines 7-20 has been amended as follows:

--The [Applicant has] inventors have noted, surprisingly, that it is possible to formulate effective, rinse-fast cosmetic compositions by incorporating into these compositions unpolymerized or relatively unpolymerized organosilicon compounds chosen from organosilanes comprising one silicon atom and organosiloxanes comprising two or three silicon atoms, the organosilicon compounds also comprising per molecule at least two hydroxyl groups or two hydrolyzable functional groups and at least two nonhydrolyzable functional groups, at least one of these nonhydrolyzable functional groups being a functional group having a cosmetic effect, and at least one other of these nonhydrolyzable functional groups being a solubilizing functional group.--

Page 2, the fourth full paragraph at lines 28-33 has been amended as follows:

--The compositions according to the invention generally make it possible to obtain shampoo-fast conditioning effects on the hair. In addition, the presence of the nonhydrolyzable functional group, having a cosmetic effect, makes it possible to obtain other cosmetically advantageous [remanence] retention effects.--

Page 2, the last paragraph beginning at line 34 through page 3, line 5, has been amended as follows:

--In the present invention, the expression "nonhydrolyzable functional group having a cosmetic effect" means any functional chemical group that, after applying the composition to the hair, gives the hair a specific [remanence] retentive cosmetic effect.

Among the specific cosmetic effects that may be mentioned are coloring effects, UV-stabilizing, antibacterial or antifungal effects, and reducing effects.--

Page 3, the first full paragraph at lines 6-14 has been amended as follows:

--Thus, for example, when the nonhydrolyzable functional group(s) with a cosmetic effect is (are) group(s) with a coloring effect, the compositions that may be obtained give highly [remanence] retentive coloring effects, without using active agents that degrade the fiber (aqueous hydrogen peroxide solution or aqueous ammonia) and moreover without being confronted with problems of irregular results when the composition has been applied to hair that is not uniformly sensitized.--

Page 5, the last full subparagraph at lines 31-32 has been amended as follows:

--R' represents a halogen or [a group] an OR₁ group and R'' represents a halogen or [a group] an OR₂ group;--

Page 6, the last three subparagraphs at lines 24-29 have been amended as follows:

--R₆ represents a halogen or [a group] an OR'₆, R''₆, R'''\sub{6} or R''''₆ group;

R₇ represents a halogen or [a group] an OR'₇, R''₇, R'''\sub{7} or R''''₇ group;

R₈ represents a halogen or [a group] an OR'₈, R''₈, R'''\sub{8} or R''''₈ group;--

Page 7, the first two subparagraphs at lines 1-4 have been amended as follows:

--R₉ represents a halogen or [a group] an OR'₉, R''₉, R'''\sub{9} or R''''₉ group; and

R₁₀ represents a halogen or [a group] an OR'₁₀, R''₁₀, R'''\sub{10} or R''''₁₀ group;--

Page 7, the sixth-eighth subparagraphs at lines 14-19 have been amended as follows:

--at least one of the groups R_6 and R_9 denotes a halogen or [a group] an OR'_6 or OR'_9 group;

at least one of the groups R_7 , R_8 and R_{10} denotes a halogen or [a group] an OR'_7 , OR'_8 or OR'_{10} group; and

at least one of the groups R_6 , R_7 , R_8 , R_9 and R_{10} denotes [a functional group] an R''_6 , R''_7 , R''_8 , R''_9 and R''_{10} functional group.--

IN THE CLAIMS:

Original claims 1-11 have been cancelled and new claims 12-23 substituted therefor.

ABSTRACT OF THE DISCLOSURE

The invention concerns a composition comprising, in a cosmetically acceptable medium, at least 0.02 weight percent relative to the composition total weight, one or several water soluble organosilicon compounds, selected among silanes having one silicon atom and siloxanes having two or three silicon atoms, the organosilicon compounds comprising two hydroxyl groups or groups capable of being hydrolyzed and two groups not capable of being hydrolyzed per molecule, at least one of the groups not capable of being hydrolyzed being a group with a cosmetic effect and at least one of the remaining functional groups being a group with a solubilizing function. The invention is applicable to hair care compositions.

COSMETIC COMPOSITION BASED ON ORGANOSILICON COMPOUNDS
COMPRISING AT LEAST ONE FUNCTION WITH A COSMETIC EFFECT

5 The present invention relates generally to aqueous cosmetic compositions, in particular for treating the hair, comprising unpolymerized or relatively unpolymerized, water-soluble organosilicon compounds containing two nonhydrolyzable functions, at least one of which has a cosmetic effect, and two hydrolyzable functions
10 per molecule.

It is common practice to attempt to treat the hair so as to improve its properties (disentangling, color or softness). The various treatments developed make it possible to obtain good performance qualities, but, in
15 general, the benefit obtained is not found when the hair is subjected to a washing treatment.

In the case of dyeing, numerous studies have made it possible to develop treatments that give performance qualities, in this instance dyeing qualities, that are
20 relatively wash-fast ("oxidation" dyeing). However, users remain disappointed with the wash-fastness of their products. Furthermore, the fastness performance qualities achieved to date have been obtained at the expense of the integrity of the hair, since the use of aqueous hydrogen
25 peroxide solution and aqueous ammonia, required for oxidation dyeing, degrades the fiber to a certain extent.

Other systems have been developed, especially using dyes bearing chemical functions having great chemical affinity for the functions of the hair. A large gain in
30 remanence is achieved. However, it remains insufficient for many users. Furthermore, since the chemical functions of the hair are highly dependent on the hair's care history, this type of system shows very variable coloring effects depending on the hair onto which these systems are applied.

35 In the case of hair conditioning treatments, intended to give suppleness to hair that is considered too

stiff or to soften hair that is too dry, the current treatments give very poor remanence results.

5 There is thus a need for stable cosmetic compositions, in particular for hair treatments, which make it possible to obtain a sufficient cosmetic effect, in particular for hair in rinse-out or leave-in mode.

10 The Applicant has noted, surprisingly, that it is possible to formulate effective, rinse-fast cosmetic compositions by incorporating into these compositions unpolymerized or relatively unpolymerized organosilicon compounds chosen from organosilanes comprising one silicon atom and organosiloxanes comprising two or three silicon atoms, the organosilicon compounds also comprising per molecule at least two hydroxyl groups or two hydrolyzable functional groups and at least two nonhydrolyzable functional groups, at least one of these nonhydrolyzable functional groups being a functional group having a cosmetic effect, and at least one other of these nonhydrolyzable functional groups being a solubilizing functional group.

20 The organosilicon compounds according to the invention are capable of forming, in aqueous medium, a nonhybrid compound after self-condensation and evaporation of the support. The expression "nonhybrid compound" means a compound that is chemically homogeneous as regards silicon, that is to say that it contains no other additional metallic or organometallic species.

25 The compositions according to the invention generally make it possible to obtain shampoo-fast conditioning effects on the hair. In addition, the presence of the nonhydrolyzable functional group, having a cosmetic effect, makes it possible to obtain other cosmetically advantageous remanence effects.

35 In the present invention, the expression "nonhydrolyzable functional group having a cosmetic effect" means any functional chemical group that, after applying

the composition to the hair, gives the hair a specific remanence cosmetic effect. Among the specific cosmetic effects that may be mentioned are coloring effects, UV-stabilizing, antibacterial or antifungal effects, and
5 reducing effects.

Thus, for example, when the nonhydrolyzable functional group(s) with a cosmetic effect is (are) group(s) with a coloring effect, the compositions that may be obtained give highly remanent coloring effects, without
10 using active agents that degrade the fiber (aqueous hydrogen peroxide solution or aqueous ammonia) and moreover without being confronted with problems of irregular results when the composition has been applied to hair that is not uniformly sensitized.

Among the nonhydrolyzable functional groups with a coloring effect that may be mentioned are nitroaromatic groups, anthraquinone groups, naphthoquinone groups, benzoquinone groups, azo groups, xanthene groups, triarylmethane groups, azine groups, indoaniline groups,
20 indophenol groups and indoamine groups.

Among the nonhydrolyzable functional groups with a reducing effect, mention may be made of groups comprising a thiol function, a sulfinic acid function or a sulfinic acid salt.

Among the nonhydrolyzable functional groups with an antibacterial function, mention may be made of bisguanidine groups, cationic groups, macrolide groups and phenolic groups.

Among the nonhydrolyzable functional groups with an antifungal effect, mention may be made of pyridine groups, undecylenic groups, salicyl groups and imidazole groups.

At least one of the other nonhydrolyzable functional groups is a solubilizing functional group.

The expression "solubilizing functional group" means any functional chemical group that facilitates the
35

dissolution of the silicon compound in the solvent or mixture of solvents of the composition, in particular in water.

5 Among the solubilizing nonhydrolyzable functional groups that may be mentioned are any group of atoms bearing an amino radical, a carboxylic acid radical or salts thereof, a sulfonic acid radical or salts thereof, a sulfate radical, a quaternary ammonium radical, a polyalcohol radical such as glycol, a polyether radical
10 such as polyalkylene ether, and a phosphate radical.

 Among the amino functions that may be mentioned are primary, secondary or tertiary alkylamines, such as methylamino, alkylamino and propylamino.

 Among the carboxylic acid functions and salts
15 thereof, mention may be made of saturated monoacid radicals such as acetic acid, propionic acid, butyric acid, isobutyric acid, valeric acid and isovaleric acid, saturated diacids such as oxalic acid, malonic acid, succinic acid, glutaric acid and adipic acid, unsaturated
20 monoacids such as acrylic acid, methacrylic acid, crotonic acid, maleic acid, fumaric acid and citraconic acid, carbocyclic acids such as benzoic acid, phthalic acid, isophthalic acid and terephthalic acid, hydroxy and alkoxy carboxylic acids such as glycolic acid, lactic acid,
25 tartaric acid and salicylic acid, and salts of these acids, in particular the alkali metal salts and more particularly the sodium and potassium salts of these acids.

 Among the quaternary ammonium functions that may be mentioned are tetraalkylammoniums and quaternary
30 alkylarylammoniums, the alkyl and/or aryl groups possibly comprising functions such as acid, hydroxyl, amine and halogen functions, and cyclic and heterocyclic quaternary ammoniums.

 Among the sulfonic acids and salts thereof,
35 mention may be made of alkylsulfonic acids such as methylsulfonic acid, arylsulfonic acids such as

phenylsulfonic acid, alkoxy-sulfonic acids such as ethoxy-sulfonic acid, alkylaryl- and arylalkylsulfonic acids, and salts of these acids, in particular the alkali metal salts of these acids and more particularly the sodium and potassium salts of these acids.

Among the alkyl ether residues that may be mentioned are poly(oxyethylenes), poly(oxypropylenes), poly(oxytetramethylenes) and polyglycols such as poly(ethylene glycol) and poly(propylene glycol).

The recommended solubilizing functions are amine and quaternary ammonium functions.

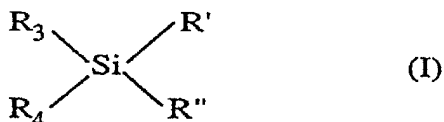
The hydrolyzable functional groups of the silicon compounds according to the invention are preferably alkoxy, aryloxy or halogen groups.

Among the alkoxy groups that may be mentioned are alkyloxy groups such as methoxy, ethoxy, propoxy and butoxy, and arylalkyloxy groups such as the phenylmethyloxy group.

Among the aryloxy groups that may be mentioned are the phenoxy group and alkylaryloxy groups such as tolyloxy, ethylphenyloxy and propylphenyloxy groups.

Among the halogens that may be mentioned are fluorine, chlorine, bromine and iodine, chlorine being the preferred halogen.

The organosilanes that are preferred according to the invention correspond to the formula:



in which:

R' represents a halogen or a group OR₁ and R'' represents a halogen or a group OR₂;

R₁ and R₂ represent, independently of each other, hydrogen or a saturated or unsaturated, linear or branched

hydrocarbon-based group optionally bearing additional chemical groups;

R₃ is a nonhydrolyzable functional group with a cosmetic effect, and

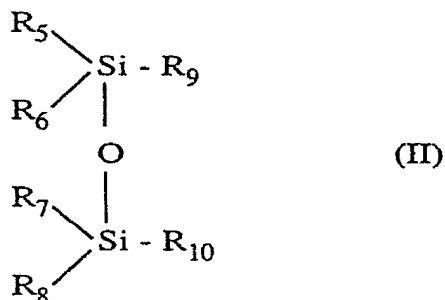
5 R₄ is a nonhydrolyzable functional group with a solubilizing function.

Preferably, R₁ and R₂ represent hydrogen, a C₁ to C₁₂ alkyl group, a C₆ to C₁₄ aryl group, a (C₁ to C₈)alkyl(C₆ to C₁₄)aryl group and a (C₆ to C₁₄)aryl(C₁ to C₈)alkyl group.

10 Preferably, the group R₃ is a nonhydrolyzable group with a coloring, UV-stabilizing, antibacterial or antifungal function, or alternatively with a reducing function.

The nonhydrolyzable group R₄ with a solubilizing function is preferably an amine group.

The organosiloxanes that are preferred according to the invention correspond to the formula:



20

in which:

R₅ represents a nonhydrolyzable functional group with cosmetic activity;

25 R₆ represents a halogen or a group OR'₆, R''₆, R'''₆ or R''''₆;

R₇ represents a halogen or a group OR'₇, R''₇, R'''₇ or R''''₇;

R₈ represents a halogen or a group OR'₈, R''₈, R'''₈ or R''''₈;

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R_9 represents a halogen or a group OR'_9 , R''_9 , R'''_9 or R''''_9 ; and

R_{10} represents a halogen or a group OR'_{10} , R''_{10} , R'''_{10} or R''''_{10} ;

5 R'_6 , R''_6 , R'_7 , R''_7 , R'_8 , R''_8 , R'_9 , R''_9 , R'_{10} and R''_{10} represent, independently of each other, a saturated or unsaturated, linear or branched hydrocarbon-based group optionally bearing additional chemical groups, R'_6 , R'_7 , R'_8 , R'_9 and R'_{10} also possibly denoting hydrogen;

10 R'''_6 , R'''_7 , R'''_8 , R'''_9 and R'''_{10} are nonhydrolyzable functional groups with a cosmetic effect;

R''''_6 , R''''_7 , R''''_8 , R''''_9 and R''''_{10} are nonhydrolyzable functional groups with a solubilizing function;

15 at least one of the groups R_6 and R_9 denotes a halogen or a group OR'_6 or OR'_9 ;

at least one of the groups R_7 , R_8 and R_{10} denotes a halogen or a group OR'_7 , OR'_8 or OR'_{10} ; and

at least one of the groups R_6 , R_7 , R_8 , R_9 and R_{10} denotes a functional group R''''_6 , R''''_7 , R''''_8 , R''''_9 and R''''_{10} .

20 More preferably, the group with a cosmetic function is a group with a coloring, UV-stabilizing, antibacterial or antifungal function or with a reducing function.

The compositions according to the invention
25 contain large concentrations of unpolymerized or relatively unpolymerized silicon compounds, that is to say that they contain at least 0.02% by weight of unpolymerized or relatively unpolymerized silicon compounds relative to the total weight of the composition, and preferably at least
30 0.5% by weight, which may be up to 50% by weight.

The concentrations of unpolymerized or relatively unpolymerized organosilicon compounds according to the invention are determined by usual methods of analysis such as silicon-29 and proton NMR spectroscopy, and by
35 chromatography.

The compositions according to the invention may be aqueous, aqueous-alcoholic or alcoholic compositions, preferably aqueous compositions.

5 However, for reasons of use of adjuvants, for example, it may be necessary to add a cosolvent such as ethanol or acetone.

10 In a known manner, all the compositions of the invention may contain adjuvants commonly used in cosmetics, such as oils, waxes or other common fatty substances; standard gelling agents and/or thickeners; emulsifiers; moisturizers; emollients; sunscreens; hydrophilic or lipophilic active agents, for instance ceramides; free-radical scavengers; surfactants; polymers; proteins; bactericides; sequestering agents; antidandruff agents; 15 antioxidants; preserving agents; fragrances; fillers; dyestuffs.

The amounts of these various adjuvants are those conventionally used in the field under consideration.

20 Needless to say, a person skilled in the art will take care to select the optional compound(s) added to the composition according to the invention such that the advantageous properties intrinsically associated with the composition in accordance with the invention are not, or are not substantially, adversely affected by the envisaged 25 addition.

The compositions according to the invention may be used in rinse-out or leave-in mode.

30 The compositions according to the invention may be in any form that is suitable for topical application, especially in the form of solutions of the lotion or serum type; in the form of aqueous gels; in the form of emulsions obtained by dispersing a fatty phase in an aqueous phase (O/W) or, conversely, (W/O), of more or less thick liquid consistency such as more or less unctuous milks and creams.

35 These compositions are prepared according to the usual methods.

The compositions according to the invention are preferably used as hair products, especially for holding the hairstyle or for shaping the hair. They may also give the hair a temporary coloration or provide the hair with good protection against the effects of UV radiation, or have antibacterial, antifungal and similar actions, depending on the functional group with a cosmetic effect included in the unpolymerized or relatively unpolymerized silicon compounds of the compositions.

The hair compositions according to the invention are preferably styling products such as hairsetting gels or lotions, blow-drying lotions, and fixing and styling compositions such as lacquers or sprays.

The lotions may be packaged in various forms, especially in vaporizers, in pump-dispenser bottles or in aerosol containers to allow an application of the composition in vaporized form or in the form of a mousse. Such packaging forms are indicated, for example, when it is desired to obtain a spray or mousse for fixing or treating the hair.

A subject of the present invention is also the use of the composition according to the invention in a process for treating the hair, in order to hold and/or color it.

According to one embodiment of this process, the composition is applied to rinsed or unrinsed hair, preferably in the form of a spray, either using a pump-dispenser bottle or using an aerosol.

After spraying onto the head of hair, the composition is left to act and to dry.

The hair may be placed in the desired shape, either before the application or immediately after.

The drying time may be variable and depends on the nature of the composition.

EXAMPLE

The composition below according to the invention was prepared:

5

- Aminopropyl-N-(2,4-dinitrophenyl)-aminopropyldiethoxysilane 2 g
- 50/50 aqueous-alcoholic mixture 98 g

10 g of the above composition are applied to a wig of 15 g of prewashed natural hair, containing 70% white hairs.

10

The composition is left to act for 30 minutes and is then rinsed out with water. The hair is then dried.

15

After the treatment the hair is dyed. The orange-colored dyeing result obtained is very shampoo-fast. Furthermore, the hair is very shiny and feels like it has a lot of body.

CLAIMS

1. A cosmetic composition comprising, in a cosmetically acceptable medium, at least 0.02% by weight, relative to the total weight of the composition, of one or more water-soluble, unpolymerized or relatively unpolymerized organosilicon compounds chosen from silanes comprising one silicon atom and siloxanes comprising two or three silicon atoms, these organosilicon compounds comprising per molecule at least two hydroxyl or hydrolyzable groups and at least two nonhydrolyzable functional groups, at least one of these nonhydrolyzable functional groups being a group with a cosmetic effect, and at least one of the remaining nonhydrolyzable functional groups being a group with a solubilizing function.

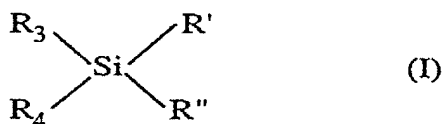
2. The cosmetic composition as claimed in claim 1, characterized in that the unpolymerized or relatively unpolymerized organosilicon compounds represent at least 0.5% by weight of the composition.

3. The composition as claimed in claim 2, characterized in that the functional groups with a cosmetic effect are chosen from nonhydrolyzable functional groups having a coloring, UV-stabilizing, antibacterial or antifungal effect or a reducing effect.

4. The composition as claimed in any one of claims 1 to 3, characterized in that the nonhydrolyzable functional group with a solubilizing function is chosen from primary, secondary and tertiary amine groups.

5. The composition as claimed in any one of claims 1 to 4, characterized in that the hydrolyzable groups are chosen from alkoxy, aryloxy and halogen groups.

6. The cosmetic composition as claimed in any one of the preceding claims, characterized in that the unpolymerized or relatively unpolymerized organosilicon compound(s) is (are) chosen from the compounds of formulae:



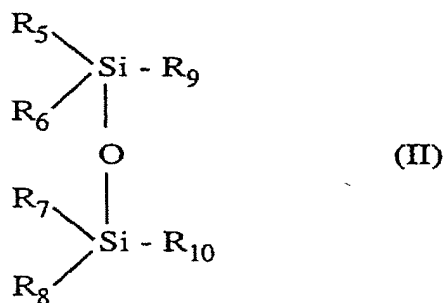
in which:

5 R' represents a halogen or a group OR₁ and R'' represents a halogen or a group OR₂;

 R₁ and R₂ represent, independently of each other, hydrogen or a saturated or unsaturated, linear or branched hydrocarbon-based group optionally bearing additional chemical groups;

10 R₃ is a nonhydrolyzable functional group with a cosmetic effect, and

 R₄ is a nonhydrolyzable functional group with a solubilizing function; and



15

in which:

 R₅ represents a nonhydrolyzable functional group with cosmetic activity;

20 R₆ represents a halogen or a group OR'₆, R''₆, R'''\sub>6 or R''''₆;

 R₇ represents a halogen or a group OR'₇, R''₇, R'''\sub>7 or R''''₇;

25 R₈ represents a halogen or a group OR'₈, R''₈, R'''\sub>8 or R''''₈;

 R₉ represents a halogen or a group OR'₉, R''₉, R'''\sub>9 or R''''₉; and

R₁₀ represents a halogen or a group OR'₁₀, R''₁₀, R'''₁₀ or R''''₁₀;

5 R'₆, R''₆, R'₇, R''₇, R'₈, R''₈, R'₉, R''₉, R'₁₀ and R''₁₀ represent, independently of each other, a saturated or unsaturated, linear or branched hydrocarbon-based group optionally bearing additional chemical groups, R'₆, R'₇, R'₈, R'₉ and R'₁₀ also possibly denoting hydrogen;

R'''₆, R'''₇, R'''₈, R'''₉ and R'''₁₀ are nonhydrolyzable functional groups with a cosmetic effect;

10 R''''₆, R''''₇, R''''₈, R''''₉ and R''''₁₀ are nonhydrolyzable functional groups with a solubilizing function;

at least one of the groups R₆ and R₉ denotes a halogen or a group OR'₆ or OR'₉;

15 at least one of the groups R₇, R₈ and R₁₀ denotes a halogen or a group OR'₇, OR'₈ or OR'₁₀; and

at least one of the groups R₆, R₇, R₈, R₉ and R₁₀ denotes a functional group R''''₆, R''''₇, R''''₈, R''''₉ and R''''₁₀.

7. The composition as claimed in any one of claims 3 to 6, characterized in that the group(s) with a coloring effect is (are) chosen from nitroaromatic groups, anthraquinone groups, naphthoquinone groups, benzoquinone groups, azo groups, xanthene groups, triarylmethane groups, azine groups, indoaniline groups, indophenol groups and indoamine groups.

25 8. The composition as claimed in any one of claims 3 to 6, characterized in that the group(s) with an antibacterial function is (are) chosen from bisguanidine groups, cationic groups, macrolide groups and phenolic groups.

30 9. The composition as claimed in any one of claims 3 to 6, characterized in that the group(s) with an antifungal effect is (are) chosen from pyridine groups, undecylenic groups, salicyl groups and imidazole groups.

35 10. The composition as claimed in any one of the preceding claims, characterized in that it is a hair product.

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11. The composition as claimed in claim 10, characterized in that it is a hair product for holding the hairstyle or for shaping the hair.

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(54) Title: COSMETIC COMPOSITION BASED ON ORGANIC SILICON COMPOUNDS COMPRISING AT LEAST A FUNCTION WITH COSMETIC EFFECT

(54) Titre: COMPOSITION COSMETIQUE A BASE DE COMPOSES ORGANIQUES DU SILICIUM COMPORTANT AU MOINS UNE FONCTION A EFFET COSMETIQUE

(57) Abstract: The invention concerns a composition comprising, in a cosmetically acceptable medium, at least 0.02 wt. % relative to the composition total weight, one or several hardly or non-polymerised water soluble organic silicon compounds, selected among silanes comprising a silicon atom and siloxanes comprising two silicon atoms, said organic silicon compounds comprising per molecule two hydroxyl groups or capable of being hydrolysed and two groups not capable of being hydrolysed, at least one of said groups being a group with cosmetic effect and at least one of the remaining functional groups not capable of being hydrolysed being a group with a solubilizing function. The invention is applicable to hair care compositions.

(57) Abrégé: La composition comprend, dans un milieu cosmétiquement acceptable, au moins 0,02 % en poids par rapport au poids total de la composition d'un ou plusieurs composés organiques du silicium soluble dans l'eau, peu ou pas polymérisés, choisis parmi les silanes comprenant un atome de silicium et les siloxanes comprenant deux atomes de silicium, ces composés organiques du silicium comportant par molécule deux groupes hydroxyles un hydrolysables et deux groupes non-hydrolysables, un au moins de ces groupes étant un groupe à effet cosmétique et un au moins de groupes fonctionnels non-hydrolysables restants étant un groupe à fonction solubilisante. Application aux compositions capillaires.

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DECLARATION AND POWER OF ATTORNEY FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63) <input type="checkbox"/> Declaration Submitted with Initial Filing <input type="checkbox"/> Declaration Submitted After Initial Filing (surcharge (37 CFR 1.16(e)) required)	Attorney Docket Number	13833.0013
	First Named Inventor	
	COMPLETE IF KNOWN	
	Application Number	/
	Filing Date	
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Examiner Name		

As a below named inventor, I hereby declare that:

My residence, mailing address, and citizenship are as stated below next to my name.

I believe I am an original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

COSMETIC COMPOSITION BASED ON ORGANIC SILICON COMPOUNDS COMPRISING AT LEAST ONE FUNCTION WITH A COSMETIC EFFECT.

(Title of the Invention)

the specification of which

☐ is attached hereto
OR

☒ was filed on (MM/DD/YYYY) 09/27/99 / as United States Application Number or PCT International Application Number PCT/FR99/02291 / and was amended on (MM/DD/YYYY) (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification; including the claims, as amended by any amendment specifically referred to above.

POWER OF ATTORNEY: I hereby appoint the practitioner(s) named below to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

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I acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), 365(b) of any foreign application(s) for patent or inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below.

Application Number(s)	Filing Date (MM/DD/YYYY)

I hereby claim the benefit under 35 U.S.C. 120 of any United States application(s), or 365(c) of any PCT international application designating the United States of America listed below, and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability in 37 C.F.R. 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application or PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (if applicable)

I hereby declare that all statements made herein of own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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